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09/747,179	12/21/2000	John G. Deshayes	E0295/7141	5524

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EXAMINER

BETIT, JACOB F

ART UNIT	PAPER NUMBER
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2175

8

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/747,179

Applicant(s)

DESHAYES ET AL.

Examiner

Jacob F. Betit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 19-26 and 35-40 is/are rejected.
- 7) ☒ Claim(s) 9-18, 27-34 and 41-48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

DOV POPOVICI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b). Section headings are underlined and boldfaced throughout the disclosed specification and do not appear in upper case lettering. Section headings should not be underlined and/or **boldfaced**, and they should appear in upper case lettering. Appropriate corrections are required according to the guidelines provided below:
2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.

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(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### *Claim Objections*

3. Claims 10, 28, and 42 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 10 fails to further limit claim 9, and rather has the effect of broadening it.

Claim 9 limits the time period for making the "comparison of contention" to "during the first time period" on line 8. Claim 10 expands this time period to "during a comparison time period that includes at least one guard band time period added to the first time period" on lines 4-5.

Claim 28 fails to further limit claim 27, and rather has the effect of broadening it.

Claim 27 limits the time period for making the "comparison of contention" to "during the first time period" on line 8. Claim 28 expands this time period to "during a comparison

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time period that includes at least one guard band time period added to the first time period" on lines 4-5.

Claim 42 fails to further limit claim 42, and rather has the effect of broadening it. Claim 41 limits the time period for making the "comparison of contention" to "during the first time period" on line 8. Claim 42 expands this time period to "during a comparison time period that includes at least one guard band time period added to the first time period" on lines 4-5.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8, 26, and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "approximately" in claim 8, line 3; claim 26, line 3; and claim 40, line 3 is a relative term, which renders the claim indefinite. The term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of

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the scope of the invention. One of ordinary skill in the art would not know within what degree the amount of target data is the same size.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 19-26, and 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huai et al. (U.S. patent No. 5,673,381) in view of Hill et al. (U.S. patent No. 5,924,097).

As to claim 1, Huai et al. teaches in a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area (see figure 2), the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area (see column 7, lines 34-45), each backup process to back up a respective portion of the target data (see column 7, lines 1-28).

Huai et al. does not teach an apparatus comprising:

at least one contention controller, coupled to the at least one backup storage system, that distributes the respective portions of the target data among the at least two

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backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

Hill et al. teaches an apparatus comprising: at least one contention controller, coupled to the at least one backup storage system, that distributes the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data (see column 6, line 49 through column 7, line 37).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. to include an apparatus comprising: at least one contention controller, coupled to the at least one backup storage system, that distributes the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. by the teachings of Hill et al. because an apparatus comprising: at least one contention controller, coupled to the at least one backup storage system, that distributes the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage

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system to access the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claim 2, Huai et al. as modified, teaches wherein each backup process is capable of using the at least one resource (see Huai et al., column 8, lines 9-21), and wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes so as to reduce a contention for the at least one resource between the at least two backup processes (see Hill et al., column 7, lines 9-37).

As to claim 3, Huai et al. as modified, still does not teach wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one physical location of the respective portions of the target data in the at least one storage area.

Hill et al. teaches wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one physical location of the respective portions of the target data in the at least one storage area (see column 6, lines 33-48).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, to include wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one physical location of the respective portions of the target data in the at least one storage area.



It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, by the teachings of Hill et al. because wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one physical location of the respective portions of the target data in the at least one storage area would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claim 4, Huai et al. as modified, still does not teach wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one of a physical location of the respective portions of the target data in the at least one storage area and at least one path between the at least one backup storage system and the physical locations of the respective portions of the target data.

Hill et al. teaches wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one of a physical location of the respective portions of the target data in the at least one storage area and at least one path between the at least one backup storage system and the physical locations of the respective portions of the target data (see column 6, lines 33-48).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, to include wherein the at least one contention controller distributes the respective portions of the

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target data among the at least two backup processes based on at least one of a physical location of the respective portions of the target data in the at least one storage area and at least one path between the at least one backup storage system and the physical locations of the respective portions of the target data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, by the teachings of Hill et al. because wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes based on at least one of a physical location of the respective portions of the target data in the at least one storage area and at least one path between the at least one backup storage system and the physical locations of the respective portions of the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claim 5, Huai et al. as modified, teaches wherein the at least one resource includes at least one storage medium in the at least one storage area on which the target data is stored (see Huai et al., column 9, lines 52-61), and wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes to reduce contention for the at least one storage medium (see Hill et al., column 7, lines 9-37).

As to claim 6, Huai et al. as modified, teaches wherein the at least one storage medium includes at least one disk drive (see Huai et al., column 9, lines 52-61), and

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wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes to reduce contention for the at least one disk drive (see Hill et al., column 6, lines 49-62).

As to claim 7, Huai et al. as modified, teaches wherein the at least one resource includes at least one access path controller, coupled to the at least one backup storage system, that controls at least one path between the at least one backup storage system and the target data, and wherein the at least one contention controller distributes the respective portions of the target data among the at least two backup processes to reduce contention for the at least one access path controller (see Hill et al., column 6, lines 49-62, where it is inherent that any kind of memory device will have a memory access controller).

As to claim 8, Huai et al. as modified, teaches wherein the at least one contention controller assigns the respective portions to the at least two backup processes such that each respective portion includes an amount of data, which is not different from any other portion by more than the size of the largest file being backed up up (see Hill et al., column 2, lines 20-23).

As to claim 19, Huai et al. as modified, teaches in combination with the at least one backup storage system and the at least one storage area (see Huai et al., figure 2).

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As to claim 20, Huai et al. teaches in a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area (see figure 2), the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area (see column 7, lines 34-45), each backup process to back up a respective portion of the target data (see column 7, lines 1-28).

Huai et al. does not teach an apparatus comprising:

means, coupled to the at least one backup storage system, for distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

Hill et al. teaches an apparatus comprising: means, coupled to the at least one backup storage system, for distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data (see column 6, line 49 though column 7, line 37).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. to include an apparatus comprising: means, coupled to the at least one backup storage system, for distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. by the teachings of Hill et al. because an apparatus comprising: means, coupled to the at least one backup storage system, for distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claim 21, Huai et al. teaches in a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area (see figure 2), the at least one backup storage system configured to execute at least two backup processes in parallel to backup target data stored in the at least one storage area (see column 7, lines 34-45), each backup process to back up a respective portion of the target data (see column 7, lines 1-28).

Huai et al. does not teach a method comprising an act of:

a) distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

Hill et al. teaches a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at

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least one backup storage system to access the target data (see column 6, line 49 through column 7, line 37).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. to include a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. by the teachings of Hill et al. because a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claim 35, Huai et al. teaches a computer readable medium encoded with a program for execution on a computer (see abstract, where it is inherent that the method disclosed would have to be executed from “ a computer readable medium encoded with a program”, the program causes the computer to do the steps of the disclosed method) in a computer environment including at least one data storage area and at least one backup data storage system coupled to the at least one data storage area (see figure 2), the at least one backup storage system configured to execute at least two backup processes in

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parallel to backup target data stored in the at least one storage area (see column 7, lines 34-45), each backup process to back up a respective portion of the target data, the program, when executed on the computer (see column 7, lines 1-28).

Huai et al. does not teach performing a method comprising an act of:

a) distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

Hill et al. teaches performing a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data (see column 6, line 49 through column 7, line 37).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. to include performing a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. by the teachings of Hill et al. because performing a method comprising an act of: distributing the respective portions of the target data among the at least two backup processes based, at least in part, on an

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availability of at least one resource in the computer environment used by the at least one backup storage system to access the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claims 22 and 36, Huai et al. as modified, teaches wherein the act a) includes an act of distributing the respective portions of the target data among the at least two backup processes based on the availability of the at least one resource at different times during the at least two backup processes (see Hill et al., column 7, lines 9-37).

As to claims 23 and 37, Huai et al. as modified, still does not teach wherein the act a) includes an act of distributing the respective portions of the target data among the at least two backup processes based on at least one physical storage location of the target data.

Hill et al. teaches wherein the act includes an act of distributing the respective portions of the target data among the at least two backup processes based on at least one physical storage location of the target data (see column 6, lines 33-48).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, to include wherein the act includes an act of distributing the respective portions of the target data among the at least two backup processes based on at least one physical storage location of the target data.



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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Huai et al. as modified, by the teachings of Hill et al. because wherein the act includes an act of distributing the respective portions of the target data among the at least two backup processes based on at least one physical storage location of the target data would maximize efficiency between various hosts in a multiprocessing computer system (see Hill et al., column 1, lines 7-11).

As to claims 24 and 38, Huai et al. as modified, teaches wherein the act a) includes an act of:

b) distributing the respective portions of the target data among the at least two backup processes to reduce contention for at least one path between the at least one backup storage system and the target data (see Hill et al., column 6, lines 49-62).

As to claims 25 and 39, Huai et al. as modified, teaches wherein each backup process of the at least two backup processes is capable of using the at least one resource to backup its respective portion of the target data (see Huai et al., column 9, lines 52-61), and wherein the act a) includes an act of:

b) assigning respective portions of the target data to the at least two backup processes so as to reduce a contention for the at least one resource between the at least two backup processes (see Hill et al., column 6, lines 49-62).

As to claims 26 and 40, Huai et al. as modified, teaches wherein the act b) includes an act of assigning the respective portions to the at least two backup processes

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such that each respective portion includes an amount of data, which is not different from any other portion by more than the size of the largest file being backed up (see Hill et al., column 2, lines 20-23).

***Allowable Subject Matter***

8. Claims 9-18, 27-34, and 41-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Huai et al. (U.S. patent No. 5,673,381) and Hill et al. (U.S. patent No. 5,924,097), does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

wherein the at least one contention controller makes at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period, and generates at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 9.

Claims 10-18 are objected to because they depend from the objected to dependent claim 9.

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The prior art of record, Huai et al. (U.S. patent No. 5,673,381) and Hill et al. (U.S. patent No. 5,924,097), does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

d) generating at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 27.

Claims 28-34 are objected to because they depend from the objected to dependent claim 27.

The prior art of record, Huai et al. (U.S. patent No. 5,673,381) and Hill et al. (U.S. patent No. 5,924,097), does not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

c) making at least one comparison of contention for at least one first resource used to access the first portion between the first backup process and at least one other backup process of the N backup processes during the first time period; and

d) generating at least one contention penalty for the first backup process based on the at least one comparison, as claimed in claim 41.

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Claims 42-48 are objected to because they depend from the objected to dependent claim 41.


***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob F. Betit whose telephone number is (703) 305-3735. The examiner can normally be reached on Monday through Friday 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (703) 305-3830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jfb  
March 5, 2004

  
DOV POPOVICI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100